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09/673,808	01/12/2001	Mark Poletti	0074-26485GW	5524

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DANN, DORFMAN, HERRELL & SKILLMAN  
1601 MARKET STREET  
SUITE 2400  
PHILADELPHIA, PA 19103-2307

EXAMINER

CHAU, COREY P

ART UNIT PAPER NUMBER

2644

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. The term "substantially" in claims 1 and 8 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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4. Claims 1, 3-5, 8, 10-15, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5812674 to Jot et al. (hereafter as Jot).

5. Regarding Claim 1, Jot discloses a unitary in-line early reflection enhancement system (Figs. 8-11) comprising:

multiple inputs for receiving multiple input signals from one or more microphones positioned close to one or more sound sources within a room or other spaces so as to detect predominantly direct sound (Figs. 1a-1f; column 12, lines 9-21);

an early reflection generating stage which has a finite impulse response and which without internal feedback generates a number of delayed discrete reproductions of the input signals whereby the stability of the system is substantially independent of delay is independent of delay times and amplitudes, the early reflection generation stage comprising at least one cross-coupling matrix which is an orthonormal cross-coupling matrix, wherein the early reflection generation stage has an overall power gain that is substantially constant with frequency to provide a unitary transfer function matrix (Figs. 9 and 10; column 16, line 9 to column 17, line 37; column 18, lines 10-21); and

a number of loudspeakers placed to broadcast said delayed discrete reproductions of the microphone signals into the room or other spaces (Figs. 1a and 11; column 18, lines 37-48).

6. Regarding 3, Jot discloses the early reflection generation stage includes a series connection of two or more cross-coupling matrices with a set of delay lines positioned between the two matrices (741,742,750,810)(Fig. 9).

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7. All elements of Claim 4 are comprehended by Claim 1. Claim 4 is rejected for the reasons stated above apropos to Claim 1.

8. Regarding Claim 5, Jot discloses each input is coupled to every output to provide a maximization of diffusion of the input signals to all of the outputs (Figs. 8-11).

9. Claim 8 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

10. Claim 10 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

11. Claim 11 is essentially similar to Claim 4 and is rejected for the reasons stated above apropos to Claim 4.

12. Claim 12 is essentially similar to Claim 5 and is rejected for the reasons stated above apropos to Claim 5.

13. Claim 13 is essentially similar to Claims 1 and 3 and is rejected for the reasons stated above apropos to Claims 1 and 3.

14. Claim 14 is essentially similar to Claim 4 and is rejected for the reasons stated above apropos to Claim 4.

15. Claim 15 is essentially similar to Claim 5 and is rejected for the reasons stated above apropos to Claim 5.

16. Claim 18 is essentially similar to Claims 8 and 10 and is rejected for the reasons stated above apropos to Claims 8 and 10.

17. Claim 19 is essentially similar to Claim 4 and is rejected for the reasons stated above apropos to Claim 4.

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18. Claim 20 is essentially similar to Claim 5 and is rejected for the reasons stated above apropos to Claim 5.

***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5812674 to Jot in view of PCT/NZ93/00041 to Poletti.

21. Regarding Claim 6, Jot discloses a unitary in-line early reflection enhancement system, but does not expressly disclose in combination with a wideband non-in-line assisted reverberation system which increase apparent room volume, including multiple loudspeakers to broadcast sound into room, and reverberation matrix connecting a similar bandwidth signal from each microphone through one or more reverberators having an impulse response consisting of a number of echoes the density of which increases over time, to one or more loudspeakers. Poletti discloses a wideband assisted reverberation system which increases apparent room volume, including multiple loudspeakers to broadcast sound into the room, and a reverberation matrix connecting a similar bandwidth sound from each microphone through one or more reverberators having an impulse response consisting of a number of echoes the density of which increases over time, to one or more loudspeakers (claims 1 and 2) in order to

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improve and control the acoustic of a concert hall or auditorium (page 1, paragraph 0001). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jot with the teaching of Poletti to combine the unitary in-line early reflection enhancement system with a wideband non-in-line assisted reverberation system in order to improve and control the acoustic of a concert hall or auditorium.

22. Regarding Claim 7, Jot as modified discloses said wideband non-in-line assisted reverberation system the reverberation matrix connects a similar bandwidth signal from each microphone through one or more reverberators to at least two loudspeakers each of which receives a signal comprising a sum of at least two reverberated microphone signals (claims 1, 2, and 3).

23. Claim 16 is essentially similar to Claim 6 and is rejected for the reasons stated above apropos to Claim 6.

24. Claim 17 is essentially similar to Claim 7 and is rejected for the reasons stated above apropos to Claim 7.

### ***Response to Arguments***

25. Applicant's arguments with respect to claims 1, 3-8, and 10-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 26, 2005  
CPC

  
HUYEN LE  
PRIMARY EXAMINER